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We claim:

1. A method of improving cholesterol levels in a subject in need of such improvement, the method comprising:

5 identifying a subject with hypercholesteremia or at risk of developing hypercholesteremia having a BamHI "AA" genotype for a glucose transport 4 gene, wherein the subject is in need of improved cholesterol levels; and

engaging the subject in extensive exercise training for a period of time sufficient to improve the cholesterol levels in the subject.

10 2. A method of improving cholesterol levels in a subject in need of such improvement, the method comprising:

identifying a subject with hypercholesteremia or at risk of developing hypercholesteremia having a "12" genotype for a myostatin exon 2 gene, wherein the subject is in need of improved cholesterol levels; and

15 engaging the subject in extensive exercise training for a period of time sufficient to improve the cholesterol levels in the subject.

20 3. A method of improving cholesterol levels in a subject in need of such improvement, the method comprising:

identifying a subject with hypercholesteremia or at risk of developing hypercholesteremia having a "12" genotype for an insulin receptor substrate-1 gene, wherein the subject is in need of improved cholesterol levels; and

engaging the subject in extensive exercise training for a period of time sufficient to improve the cholesterol levels in the subject.

25 4. A method of improving diabetes status in a subject in need of such improvement, the method comprising:

30 identifying a subject with diabetes or at risk of developing diabetes having a "11" genotype for a myostatin exon 2 gene, wherein the subject is in need of improved diabetes status; and

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engaging the subject in extensive exercise training for a period of time sufficient to improve the diabetes status in the subject.

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